

In the Claims:

Please amend the claims as follows:

Claims 1-21 (canceled)

22. A system for removing an obstruction from a blood vessel, comprising:
a catheter having a lumen;

an expandable capture element contained within the lumen of the catheter, the capture element being in a collapsed position when contained within the lumen and being in an expanded position when positioned outside the lumen, the expandable capture element having a support structure forming a closed loop having a plurality of integrally formed hinges; and

an obstruction engaging device which extends through the expandable capture element, the engaging device having a collapsed shape and an expanded shape.

23. The system of claim 22, wherein:

the capture element has a flexible cover attached to the support structure, the cover having a distal end which is positioned at the loop so that the loop opens the distal end of the cover.

24. The system of claim 22, wherein:

the support structure has a plurality of longitudinal struts which extend proximally from the loop.

25. The system of claim 24, wherein:

the struts do not intersect and form a conical shape when the capture element is in the expanded.

26. The system of claim 22, wherein:

the loop has integrally formed hinges.

27. The system of claim 26, wherein:
the hinges are formed by V-shaped elements.

28. The system of claim 22, wherein:
the obstruction engaging device has a filament configured to penetrate and engage an
obstruction.

29. A system for removing an obstruction from a blood vessel, comprising:
a catheter having a lumen;
an expandable capture element which is contained within the lumen of the catheter, the
capture element being slidable within the lumen of the catheter, the capture element having an
actuator for manually expanding and contracting the capture element; and
an obstruction engaging device which passes through the capture element.

30. The system of claim 29, wherein:
the obstruction engaging devices includes a filament for engaging the obstruction.

31. The system of claim 29, wherein:
the actuator has a control arm and a stable arm, the control arm being manipulated to
expand and collapse the capture element.

32. The system of claim 29, wherein:
the actuator has a loop and a control arm which is manipulated to open and close the
loop.

33. The system of claim 29, wherein:
the capture element everts when moving outside the lumen.

34. The system of claim 29, wherein:
the actuator includes a tube and a wire extending through the tube.

35. The system of claim 29, wherein:
the actuator includes at least two wires.

36. The system of claim 35, wherein:

the actuator includes first and second stabilizing wires and at least one actuating wire.

37. A catheter for capturing an obstruction, comprising:

a catheter having a lumen;

a capture element positioned in the lumen of the catheter, the capture element being expandable, the capture element having an expandable support structure and a cover attached to the support structure, the cover having a length which is at least three times a diameter of the support structure in the expanded position.

38. The catheter of claim 37, wherein:

the cover has a length which is at least five times a diameter of the support structure in the expanded position.

39. A device for removing an obstruction from a blood vessel, comprising:

an expandable loop which is movable from a collapsed position to an expanded position;

a cover coupled to the loop, the distal end of the cover being moving from a closed position to an open position when the loop moves from the collapsed to expanded positions; and

a tube having an actuator extending therethrough, the actuator being coupled to the loop so that relative movement between the tube and the actuator causes the loop to move between the expanded and collapsed positions.

40. The device of claim 39, wherein:

the tube is positioned outside the cover.

41. The device of claim 39, further comprising:

a catheter passing through the cover; and

an obstruction engaging device passing through the catheter.

42. A device for removing an obstruction from a blood vessel, comprising:

a tube;

a support structure movable between a collapsed position and an expanded position, the support structure extending through the tube and being naturally biased toward the expanded position, wherein the support structure expands when moved out of the distal end of the tube and is in the collapsed position when contained within the tube, the support structure being bowed outward;

a cover coupled to the structure, the cover moving from a closed position to an open position when the loop moves from the collapsed position to the expanded position.